VDS VIDEO MODEM SYSTEM
The Best Solution on Coaxial Cable

VDS2700
Installation Manual

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Introduction

The VDS2700 is a transmission system for transmitting video, audio, RS-485 data, alarm signals, and 12VDC power through one coaxial cable. The system can transmit signal and DC power to 600 meters. If a camera is powered at the remote end, without DC power supplying from Viewer side, the transmission distance of the VDS2700 can reach 1,000meters.

Features

- & One cable transmits all signals and DC power.
- & Universal Voltage Input (85V~265V).
- & Supports PTZ (pan, tile, zoom) Camera.
- & Up to 600 meters range with DC power; up to 1,000 meters range if camera consumes separate power source.
- & Supports RS-485 standard from DC (0bps) to 38.4 Kbps
- & Half-duplex channel for RS-485 port
- & Real time analog video signals for color and B/W (50 fps /60 fps), 480 TV lines resolution.
- & Built-in electrical transient voltage suppressor(TVS) and gas tube arrester protection on LINK IN and LINK OUT ends.
- & Inter-carrier technology eliminates signal interference.

Packing Checklist

Carefully unpack the VDS2700 and check that the following items are included:

- & VDS2700-R Sender (Remote Unit)
- & VDS2700-L Viewer (Local Unit)
- & Power supply (AC to DC power adapter) and power cord
- & Four mounting brackets and four screws
- & Two 120 ohms terminators for RS485 chaining. One for Remote unit and the other for RS485 Network in Local side.
- & One 1,000 ohms terminator for terminator mode use in Alarm Input side.
- & Installation Manual

Contact your dealer immediately if any of the above items appears damaged or the unit does not work.

Certificate

This equipment has been tested and found to comply with the Part 15 rules of the US FCC Regulation, and gets CE approved.

Patents

Patents covering the design, operation, techniques, and unique features of the Single-cable transmission device of a surveillance system include: U.S. Patent #US 6,369,699 B1 April 9, 2002; Taiwan Patent #201389 September 3 2004; Europe Patent #EP 1134909 A1 September 19, 2001. Other Patents are

Limited Warranty

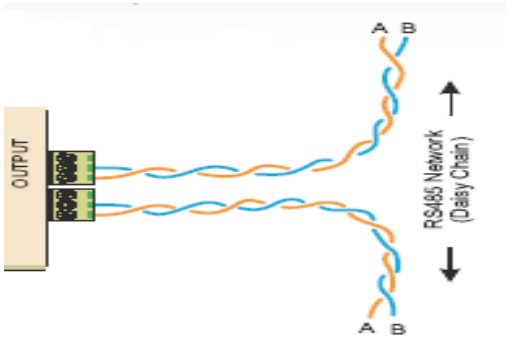
Foresight grants a warranty for this product for 18 months. Please offer the purchase date and the serial Number of Bar-Code on the back of the product to your distributor or retailer as proof for this purpose. During the warranty period, in case of defected in material or workmanship, the defective unit will be repaired or replaced according to the assessment of Biwave. However, this warranty does not cover damages caused by improper use or from unauthorized modifications by third parties.

OUTPUT Connection

Connect VIDEO OUT to a video device, e.g. a monitor.
Link the N.C. N.O. connect from the ALARM OUT to other further application devices.

RS-485 port

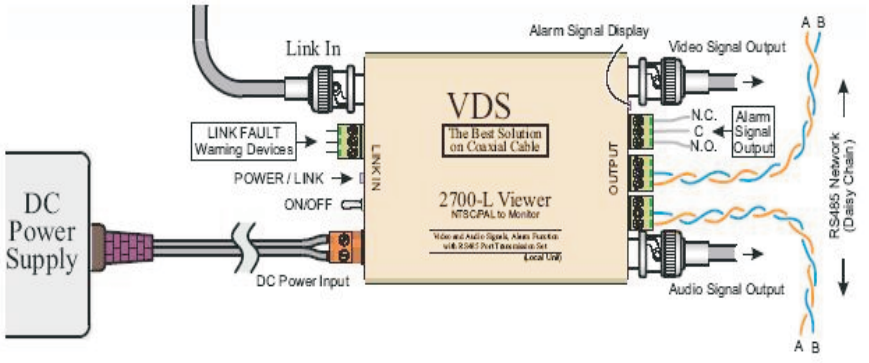
Users can connect at least 32 RS-485 devices by daisy chain. Connect with two RS485 devices with two PTB connectors separately via twist pair cables and ground wires. And adding one terminator at the end of every RS485 daisy chaining is required. Adding a 120 ohms terminator between A and B wires at either one of the following indicated locations. It depends which port is the end of the daisy chaining or not.



Connect an audio device, e.g. a speaker, with audio signal from AUDIO OUT in the OUTPUT side. Please use a connector adapter if the connector used is not BNC female type.

Connecting Viewer unit

The following illustration shows the connections for the Viewer unit:



LINK IN Connection

Connect Link In of Viewer with one end of the coaxial cable, which is connected on the other end with Link Out of Sender.

LINK FAULT

There are three ways of using the LINK FAULT.

1. The Viewer unit will buzz by itself while the cable connection between Sender unit and Viewer unit is disconnected.
2. Connect a wire from the +12V pin and OUT of the PTB connector to a buzzer or an indicator in anyplace you like.
3. Bridge Override and OUT of the PTB connector by a wire. A signal of disconnection of the coaxial cable will be sent to the system for further application through the ALARM OUT on the OutPut side of Viewer unit.
4. If users do not want the internal warming, they can just bridge the+12V and Override by a wire to turn it off.

Plug the power cord on and connect the AC power adapter to the DC POWER IN connector in the LINK IN side.

Specification of VDS2700-R Sender

To ensure smooth operation of VDS2700, the following minimum system and setup requirements should be met.

Electrical:

Video Input Signal: 1.0Vpp, 75 ohms
Bandwidth of Video Signal: 5.5MHz typ
Audio input Signal: 3.0Vpp, max 100K ohms/ Internal Impedance,.
Alarm Input type: N.C./N.O./Terminal 1,000 ohms
Power Output: DC12V, 1.0 A, max.
RS-485 Data Rate: DC(0bps) to 38.4Kbps

Connection: (PTB= Plugable Terminal Block)

Video Input: BNC Socket
Audio Input: BNC Socket/RCA Phono Socket Optional
DC and Alarm: 4 Pin PTB, 3.5mm Pitch
RS-485 Port: 3 Pin PTB, 3.5mm Pitch
Link Out: BNC Socket

Specification of VDS2700-L Viewer

To ensure smooth operation of VDS2700, the following minimum system and setup requirements should be met.

Electrical:

Video Output Signal: 1.0Vpp, 75 ohms
Bandwidth of Video Signal: 5.5MHz typ
S/N ratio of Video Signal: 50dB typ
Gain of Audio signal Output: 0dB 3dB, 600 ohms / internal impedance
Bandwidth of Audio Signal: 50Hz to 10KHz 3dB
S/N Ratio of Audio Signal: 46dB under 1.0Vpp input at RU
Alarm Output: N.C./N.O., Contact Rating 1A, 30VDC Dry contact
DC Power Input: 40V
Max. DC power Output: 38V, 1.4A, min.
Link Fault Output for external indicators: 0.15A, min.
RS-485 Data Rate: DC(0bps) to 38.4Kbps

Connection: (PTB= Plugable Terminal Block)

Link In: BNC Socket
Link Fault: 3 Pin PTB, 3.5mm Pitch
DC Power Input: 2 Pin PTB, 5.0mm Pitch
Video Output: BNC Socket
Audio Output: BNC Socket/RCA Phono Socket Optional
Alarm Output: 3 Pin PTB, 3.5mm Pitch
RS-485 Port: 3 Pin PTB, 3.5mm Pitch(2 Set)

Functions of Remote Unit

VDS2700-R Sender

INPUT side

VIDEO IN:
to receive a video signal from video source, eg. PTZ cameras.

ALARM IN:
to receive alarm connection from devices like sensors or infra-red detective devices. Both N.O. and N.C. are acceptable, even at the same time.

DC OUT:
to send 12VDC power to a camera.

RS485:
to receive and to send RS485 data to RS485 devices.

AUDIO IN:
to receive an audio signal from an audio source, eg. a microphone.

LinkOut Side

LINK OUT with DC IN:
to send out the video, audio , alarm and RS485 data to the viewer unit and to receive DC power and RS485 data in from the viewer unit.

POWER STATUS LED:
to indicate the power supply condition. When the LED is red, it implies the power supply to camera is stand-by or not been used. When the LED is green, it means the power is loaded well to the camera. When the LED is Yellow, it means the DC power is low. Please check if the cable used is over length limitation or the camera consumption more than 1.0A (note1). When the LED is flashing, it implies the power supply might be failed due to the power is too low to offer any function.

ALARM

LED:
to indicate the Alarm Input and Alarm Output are both well working.

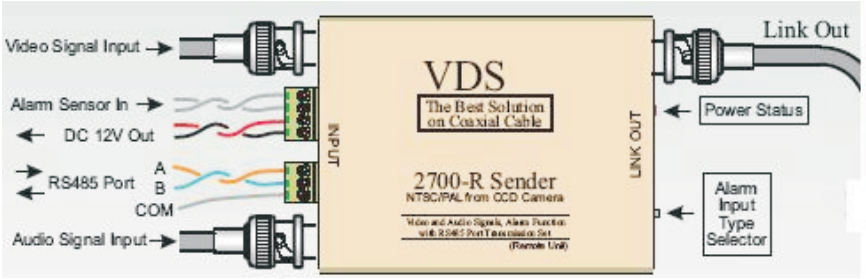
CONNECTION INPUT TYPE:
to let users to select which alarm connection type to apply: N.C. or N.O. or TERM (mixed with N.O. and N.C.)

Note 1. The 1.0A is based on the condition of less than 600M distances and 5C-2V coaxial cable used.

Please refer to How to Use Alarm manual enclosed.

Connecting Sender unit

The following illustration shows the connections for the Sender unit:



INPUT Connection

Connect video signal from the video source, e.g. a PTZ camera, to VIDEO IN in the INPUT side.

Connect a wire with the N.O./N.C. connection from sensors to the PTB connector ALARM IN in the INPUT side. Please refer to How to Use Alarm manual to improve security and flexibility of alarm connection.

Connect the power cord (DC 12V) from the DC OUT in the INPUT side to the video source, e.g. a PTZ camera.

Connect a twist pair cord with RS-485 data from a RS485 device to the RS485 Port. Adding the 120 ohms terminator between A and B wires at the location shown on the following picture.

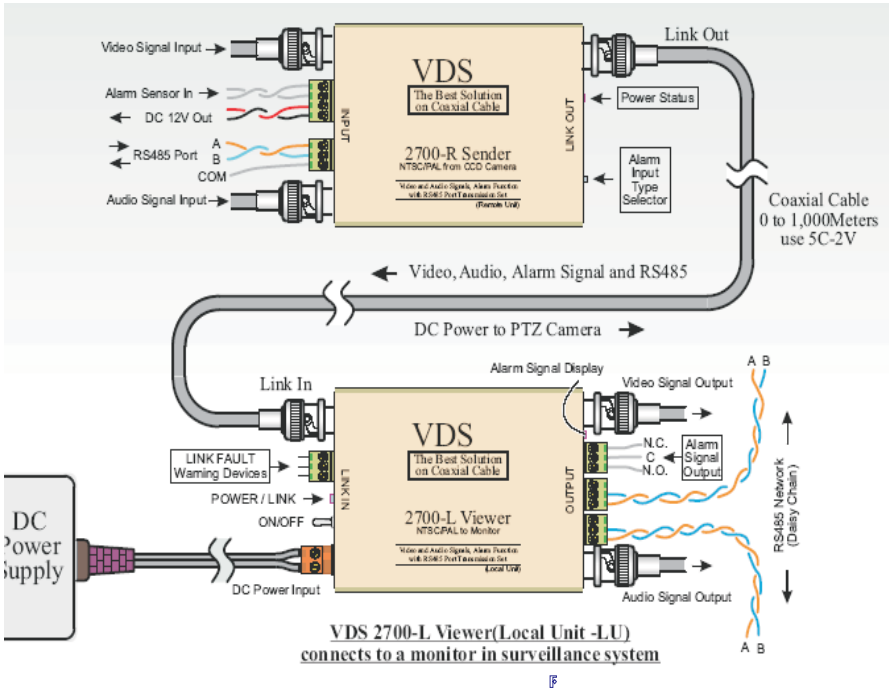
Connect the audio signal from the audio source to the AUDIO IN of the INPUT side. Please use a connector adapter, if the connector used is not BNC female type.

LINK OUT Connection

Connect the LINK OUT of Sender with one end of a coaxial cable.

Making Connection

The following illustration gives an overview of the Sender unit and the Viewer unit connections. Please note always use a coaxial cable to connect to the LINK OUT side of the Sender unit.



VDS 2700-L Viewer(Local Unit -LU) connects to a monitor in surveillance system

Installation Notice

When setting up the VDS2700 Sender unit and Viewer unit, be sure to note the following points:

Both units should be fixed securely to a permanent object such as a wall or a pillar.

Avoid locations with extreme vibrations or dust.

Avoid locations with dampness or extreme heat.

Adding one terminator at one end of RS485 Network with daisy chain is strongly recommended.

Functions of Local Unit

VDS2700-L Viewer

LINKIN side

LINK IN with DC OUT:
to receive in the video, audio, alarm and RS485 data from the Sender unit and to send DC power and RS485 data out to the Sender unit.

LINK FAULT:
to warn users if the cable between Sender unit and Viewer unit is disconnected. There are four options on how the warning message works that users can choose. The Viewer unit buzzes itself or without any warning sound from the Unit when the linkage is disconnected. Or moreover, users can send the warning signal to an extra warning device in a form or location user prefer. Or users can also send out the warning signal back the control center for further application through the Alarm OUT at the OUTPUT side of the viewer unit. No matter which option users choose, the warning can be stopped by turning off the ON/OFF switcher.

SYSTEM STATUS LED:
When users turn off the system, the LED will be red. When users turn on the system, the LED will be yellow at the first 5 seconds for initial, and then become green. The LED will keep green, when the system is on. When the system is under LINK FAULT situation as mentioned on the last paragraph, the LED will be yellow flash. The yellow flash can be stopped only after the disconnecting situation is solved.

ON/OFF:
to turn on or turn off the system

DC POWER IN:
to input the power from the power supply.

OUTPUT side

VIDEO OUT:
to send the video signal out to a device, e.g. A monitor or DVR

ALARM OUT:
to send the alarm connection out for a further application.

RS485 (In/Out):
to be used to link to the previous RS485 device or the next RS485 device in a daisy chaining. To receive RS485 data from the server (ex a control keyboard), to send RS485 data to a PTZ camera, and to pass RS485 data between RS485 devices.

AUDIO OUT:
to send out the audio signal to a device, e.g. monitor or speaker. The audio signal level output from the AUDIO OUT is exactly the same as what the AUDIO IN received at Sender Unit at Sender Unit.

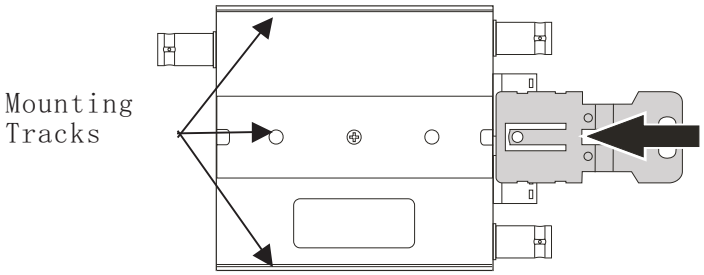
Installation of Remote and Local Units

The VDS2700 units can both be fixed to a wall or desktop with the supplied mounting brackets. The mounting brackets can be fixed onto the rear, top, or bottom of either unit.

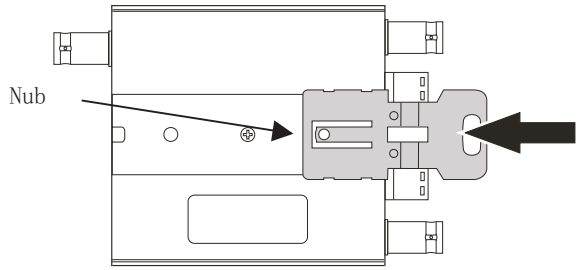
Attaching the Mounting Brackets

Attach the mounting brackets to either the Sender unit or the viewer unit as shown below:

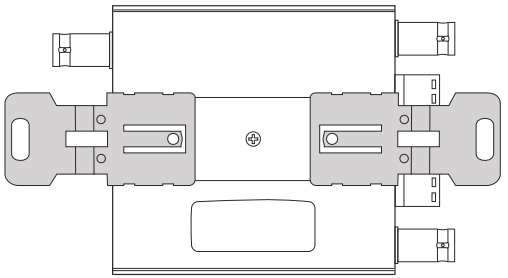
1. Align the mounting bracket with the mounting track on the rear of the unit as shown here:



2. Slide the bracket in the direction of the arrow until the white nub clicks into place as shown below:



3. Repeat the above steps on another side of the unit to attach the second bracket.

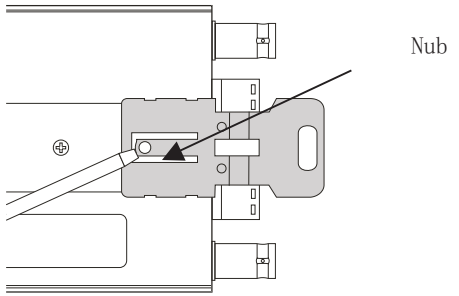


4. Fix the unit in the desired location with two screws.

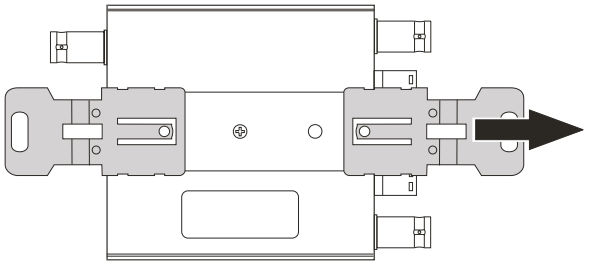
Removing the Mounting Brackets

Remove the mounting as shown below:

1. Use a flat-tipped screwdriver to lift the white nub as shown below:



2. While lifting the nub, slide the bracket out in the direction of the arrow as shown below:



3. Repeat the above steps to remove the second bracket.